

# RECLAMATION

*Managing Water in the West*

**Mid-Pacific Region**

## **2011 Standard Criteria**



**U.S. Department of the Interior  
Bureau of Reclamation**

**2011**

## **Bureau of Reclamation, Mid-Pacific Region Standard Criteria**

The Standard Criteria (Criteria) were developed by the Bureau of Reclamation (Reclamation) in response to the Central Valley Project Improvement Act of 1992 (CVPIA) (Public Law 102-575) and in accordance with the Reclamation Reform Act of 1982 (RRA) (Public Law 97-293).

**Who must use these Criteria:** The Criteria apply to any water management Plan (Plan) submitted to Reclamation as required by applicable Central Valley Project (CVP) water service contracts, settlement contracts, or any contracts that specifically invokes the Criteria.

**Exceptions:** The following are exempted from preparing a Plan using the Criteria:

- All contractors that receive **only** irrigation water from any Federal Reclamation project, and deliver water to less than a current five-year average of 2,000 acres of land.
- All contractors that receive less than a five-year average of 2,000 acre-feet per year (AFY) of **only** municipal and industrial (urban) water from any Federal Reclamation project.
- All contractors that receive any combination of irrigation and/or urban water amounting to less than a current five-year average of 2,000 acre-feet from any Federal Reclamation project.

### **Criteria Contents:**

<u><b>Section</b></u>	<u><b>Title</b></u>
1	Description of the District
2	Inventory of Water Resources
3	Best Management Practices for Agricultural Contractors <ul style="list-style-type: none"><li>a) Critical Best Management Practices</li><li>b) Exemptible Best Management Practices</li></ul>
4	Best Management Practices for Urban Contractors <ul style="list-style-type: none"><li>a) Utility operations programs</li><li>b) Education programs</li><li>c) Residential</li><li>d) Commercial, industrial, and institutional</li><li>e) Landscape</li></ul>

If this is your first Plan and if data called for in the Criteria are not available, the contractor shall include in their Plan how they (the contractor) will gather the data and make it available for the next Plan revision.

**Where to submit Plans:** Contractors shall submit Plans in electronic format to the local area office for review. For your area office representative and contact information, please visit [www.usbr.gov/mp/watershare/contacts.html](http://www.usbr.gov/mp/watershare/contacts.html). After Plans are reviewed by the area and regional

Offices and deemed adequate, the Board of Directors is required to pass a resolution adopting the Plan.

## **INTRODUCTION**

### **Background and General Information**

The purpose of the Criteria is to promote, using the best available cost-effective technology and Best Management Practices (BMPs), the highest level of delivery water management achievable by contractors, along with the implementation of water-use efficiency measures reasonably achievable by their customers.

Section 210 of the RRA requires contractors to prepare and submit Plans every five years with definite goals, appropriate water conservation measures, and timetables.

Section 3405 (e) of the CVPIA requires that the Secretary of the Interior establish Criteria to evaluate CVP Plans by April 30, 1993. The Criteria shall be reviewed at least every three years and revised, if necessary.

The CVPIA specifies that the Criteria identify BMPs including, but not limited to, efficient water management practices being developed pursuant to California State law or reasonable alternatives.

Reclamation developed and distributed a Water Management Planner detailing the type of information required by the Criteria. The Water Management Planner will be updated to conform to the revised Criteria.

## **PLAN EVALUATION, IMPLEMENTATION, AND COMPLIANCE**

Water management and water management planning are on-going processes that begin with the preparation of a comprehensive Plan. The purpose of preparing a Plan is for the contractor to implement the programs developed during the planning process. Implementation of programs identified in the Plan is critical to the success of water management within a district. The Criteria focuses not only on what constitutes an adequate Plan, but also on the implementation of the programs described in that Plan.

The Plan should be prepared using the Plan format identified in the guidebook. Plans shall include description of the district, inventory of water resources, and best management practices.

### **Flexibility and Coordination**

The Criteria recognizes the differences between contractors and are flexible enough to allow each contractor to develop and implement the types of programs that will best accomplish improved water management within their boundaries. In some cases, the contractors may choose to pool their resources and implement joint programs. The Criteria allows and encourages joint efforts toward program implementation.

Wholesalers are responsible for their subcontractor's water conservation compliance. Wholesalers may include subcontractors in a single plan containing data on each subcontractor or require each retailer to prepare their own plans. If retailers prepare their own plan, the wholesaler should be involved to the extent necessary to ensure it is found to meet the Criteria.

### **Review Process**

Contractors are required to submit draft Plans to the area office for review. Once forwarded to the Regional Office, contractors will receive notification of Reclamation's acceptance or request for modification. Following notification by Reclamation that the Plan conditionally meets the requirements of the Criteria, contractors submit one electronic copy of the complete Plan. A resolution by the contractor's Board of Directors formally adopting the Plan must also be submitted. A "Notice of Availability" regarding your Plan will be published in the *Federal Register*.

Congress established the *Federal Register* publication system as a method of informing the public of the regulations affecting them. The official agency actions published in the *Federal Register* are available to the public and subject to the Freedom of Information Act. Once in the *Federal Register*, the public is given 30 days in which to view and comment on the Plan. If no significant comments are received within 30 days, the review process is officially completed and the Plan will be posted on the Reclamation WaterShare web site: [www.usbr.gov/mp/watershare/](http://www.usbr.gov/mp/watershare/). If public comments are received, additional changes to the Plan may be required.

## **Annual Updates**

Pursuant to water service and settlement contract terms, contractors must report on Plan implementation annually.

Agricultural contractors complete annual updates by filling in the information for BMPs on the Agricultural Water Management Council (AWMC) web site at [www.agwatercouncil.org](http://www.agwatercouncil.org).

Urban contractors complete annual updates by filling in the information for Urban BMPs on the CUWCC web site at [www.cuwcc.org](http://www.cuwcc.org).

## **Five-Year Plan Revision Procedure**

Pursuant to water service and settlement contract terms, contractors are required to submit an updated Plan every five years. Contractors must use the most recently adopted Criteria for a new Plan or a five-year updated Plan. The contractor must continue to file an annual update every year to report implementation actions taken.

## **Consequences of Non-Compliance**

Under most conditions, an adequate Plan must be in place before Reclamation will consider extending any discretionary benefits, such as financial and technical assistance. Consequences of noncompliance may include, but are not limited to the following consequences:

- Ineligibility for any Reclamation grants program
- Restrictions on rescheduling
- Restrictions on water banking
- Restrictions on inclusion and exclusion requests

## **Verification**

All information is subject to verification and Reclamation may review plan implementation in coordination with the contractor.

**For the purposes of the Criteria only, the following definitions will be used:**

Agricultural Water Management Council (AWMC) - A consortium of agricultural water agencies and public interest groups working together to implement water conservation practices in California. This effort was formalized in a Memorandum of Understanding (MOU) signed in 1996. Signatory water suppliers agree to develop and implement comprehensive conservation BMPs using sound economic criteria.

Best Management Practice (BMP) - A policy, program, practice, rule, regulation and/or ordinance, or the use of devices, equipment, or facilities that meet either of the following:

- a) An established and generally accepted practice among contractors that results in more efficient use, conservation/management of water;
- b) A practice for which sufficient data are available from existing water management projects to indicate that significant efficiency improvements or management-related benefits can be achieved; that the practice is technically and economically reasonable and not socially or environmentally unacceptable; and that the practice is not otherwise unreasonable for most contractors to carry out.

CALFED - State-Federal program formalized in June 1994 upon the execution of a Framework Agreement by the State and Federal agencies having management and regulatory responsibility in the Bay-Delta Estuary. The mission of CALFED is to develop and implement a long-term comprehensive plan that will restore the ecological health of the Bay-Delta.

California Urban Water Conservation Council (CUWCC) - A consortium of urban water agencies and public interest groups working together to implement water conservation practices in California. This effort was formalized in a MOU. Signatory water suppliers agree to develop and implement comprehensive conservation BMPs using sound economic criteria.

Class I/Class II Water - The Friant Division of the Central Valley Project employs a "Class I/Class II" water contracting system. Class I water is the first 800,000 acre-feet made available from the project. Class II water is the subsequent 1.4 million acre-feet developed from the project. Class II water is available only after all Class I water has been made available.

Conjunctive Use - The planned and coordinated use of surface and groundwater supplies to increase water supply reliability, as may be included in a groundwater management plan or banking program.

Contractor - Entities that contract with Reclamation for urban and/or agricultural water.

Customer type (urban) - Urban customer types may include: single-family, multi-family, commercial, industrial, institutional, landscape irrigation, wholesale, or recycled.

District - The physical boundaries of the contractor's service area.

Five-Year Plan Revision - The revision of a Plan using the most recently adopted Criteria. Under the RRA, contractors are required to submit an updated Plan to Reclamation every five years.

Groundwater Banking Program - The intentional storage of water supplies in subsurface aquifers with plan for retrieval and beneficial use. The contractor should have a reasonable rationale of how the contractor or customers will benefit when the water is retrieved for beneficial use. Groundwater banking usually involves keeping an account of water input and the subsequent use by predetermined or specified parties. Groundwater recharge alone is not a groundwater management plan or banking program. An acceptable groundwater management plan or groundwater banking program must have a method to retrieve such water for beneficial use.

Groundwater Management Plan - A set of practices and management actions that improve groundwater conditions (with the intent of protecting and/or increasing benefits, including the sustainability of groundwater aquifers).

Groundwater Recharge - Infiltration of water into the saturation zone can occur by one of the following processes:

- a) natural recharge - recharge of a groundwater basin due to precipitation and stream flow;
- b) planned recharge - intentional recharge of a groundwater basin via percolation ponds or injection wells; or
- c) incidental recharge - recharge resulting from canal seepage or deep percolation from excess irrigation

Implementation - Achieving and maintaining the staffing, funding, and the priority levels necessary to achieve the level of activity called for in the descriptions of the various BMPs. Also, to satisfy the commitment by the contractor to use good-faith efforts to optimize benefits from implementing BMPs.

Inflow - Water that enters the district boundaries, which also enters the district distribution system.

MOU - Memorandum of Understanding.

Outflow - Water from the distribution or drainage system that leaves the district boundaries.

Retailer - A contractor who sells all water directly to the water user.

Riparian Evapotranspiration (ET) - ET from non-crop vegetation that usually grows along the banks of water conveyance and storage facilities.

Water Conservation/Water Management - Use of less water to accomplish the same purpose(s) or the use of the same amount of water to accomplish additional benefits. An example of the latter is implementation of a BMP that results in increased total crop production using the same



amount of water. Water management that results in the increased benefits of water can be achieved through the implementation of BMPs identified in these criteria. For the purpose of these Criteria, water conservation is considered the same as water management.

Water Inventory - An approach used in the Plan that identifies and quantifies all inflows, outflows, and other uses of water by the contractor in order to identify areas of potential improved water management.

Wholesaler - A contractor who sells water to entities who resell the water, usually to multiple customers.

## PLAN CONTENTS

### Section 1: Description of the District

**Intent:** To describe general physical information about the district so that a basis can be formed to evaluate improvements by and within the district, as well as provide the reader with information about the district's physical aspects that may affect the potential for improved water management.

**A. History:** Give a historical overview of the district. Provide a timeline that includes the formation of the district, date the district was formed, population served, original size, water supplies, contract information with Reclamation and others, and changes in land use. For agricultural districts, describe the changes in irrigated acreages, cropping patterns, and evolving irrigation methods.

**B. Location and Facilities:** Describe the district's incoming flow measurement method and locations, water conveyance and delivery system (unlined canals, lined canals, pipelines, etc.), and storage facilities (reservoirs, regulating reservoirs, etc.). Agricultural contractors should describe district outflow points, spill recovery systems, and whether the delivery system is on-demand (no lead time or scheduling necessary); scheduled (water order 24 hours in advance); rotation (farmer receives water every ten days); or other. Describe any restrictions on the contractor's water source(s) and proposed changes that will be implemented during the next five years.

**C. Topography and Soils:** Describe the topography of the district (hilly, flat, sloping to a water course, etc.). Indicate the impact of topography on water operations and management within the district. Describe major soil classifications and corresponding acreages within the district that affect the use of water (salinity or high-water table, high or low infiltration rates, etc.).

**D. Climate:** Describe the general climate of the district. Include average precipitation, maximum and minimum temperatures, average wind velocity, and frost-free days. If there are areas within the district known to have significantly different microclimates, describe how these affect water management decisions and operations. Also include climate data source(s).

**E. Natural and Cultural Resources:** Describe any known natural resources (wetlands, rivers, streams, lakes, etc.) within the district. Indicate if any of these resources were managed (past or present) by the contractor. Describe any known recreational and/or cultural resources (specifically, historic canals and structures 50 years old or more) within the district.

**F. Operating Rules and Regulations:** Attach a copy of the contractor's operating rules and regulations which describe information on water allocation policies, lead time necessary for water orders and water shut-off, policies regarding return flows and outflow leaving the district, and policies related to water transfers into or out of the district (by farmer and contractor).

**G. Water Measurement, Pricing, and Billing:** List the total number of connections/turn-outs, the number currently measured, and the percentage of water deliveries measured. List the types

and quantity of measurement devices (meters, calibrated gates, weirs, etc.), level of accuracy (along with documentation verifying the accuracy of the devices), frequency of calibration, and maintenance and reading schedule.

Describe the basis for water charges for agricultural and urban uses. If details are complex, provide an overview and reference the page of the contractor's written operating rules and regulations that provides additional detail. Be sure the following information can be easily found: basis of charges for agricultural water (by quantity, acre, crop, land assessment, other charges, etc.) and/or for urban (by customer class, quantity, flat rate, etc.).

For water use billed by quantity, describe the rate structure (declining, uniform or increasing block rate, etc.). Include the billing frequency (monthly, bimonthly, annually, etc.), a sample of each type of bill, and a description of the record management system.

**H. Water Shortage Allocation Policies:** Attach a copy of the contractor's agricultural and/or urban water shortage plan.

Describe how reduced water supplies, including hardship water, are allocated. Describe the contractor's policies that address wasteful use of water and describe enforcement methods.

**I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management:** Evaluate policies of agencies that provide the contractor with water. Discuss possible modifications to policies and solutions for improved water management.

## **Section 2: Inventory of Water Resources**

**Intent:** This section shall include a description of contractor's surface water supply, groundwater supply, other water supplies, source water quality monitoring programs, water uses within the district, outflow from the district, urban waste-water disposal, and water budget. Provide this information for either the last complete calendar year or the last complete water year prior to preparation of each five-year Plan update. Indicate which data set(s) are used for preparing the Plan.

In addition to the data set(s), the contractor may choose to submit data from a different year, or a combination of different years, that better represent average water conditions. This may be necessary if the conditions in the district in the year preceding the five-year Plan update were a deviation from the norm (i.e., the district received either below or above normal precipitation). These data are intended for planning purposes. For new plan elements, if data are not available during the preparation of this Plan, the contractor shall describe how the information will be obtained for the next Plan update.

**A. Surface Water Supply:** Describe the acre-foot amounts delivered to the contractor by each of the contractor's surface sources (includes local/water rights water) for the specified years. Describe any water quality limitations or management concerns associated with the identified water sources. Provide the amount of water received for each of the last ten years.

**B. Groundwater Supply:** Describe the general characteristics of the groundwater basin(s) that underlie the district. Provide a map that includes contractor-operated water wells, direction of groundwater flow, and managed groundwater recharge areas. Describe groundwater recharge programs (direct, indirect, or in lieu), groundwater banking programs, surface water storage programs, and other similar programs detailing the amount of project and non-project water utilized annually for such programs. If there is conjunctive use of surface and ground water, describe it. Attach a copy of the contractor's groundwater management plan or a description of the contractor's groundwater banking program.

**C. Other Water Supplies:** Identify any long-term water supplies not described above (drainage from upstream contractors, reclaimed urban waste water, transfer agreements, etc.).

**D. Source Water Quality Monitoring Practices:** If water quality problems exist, describe the water quality testing program (frequency of measuring and analyses performed) and which agencies conducted the water testing. Also, describe the contractor's role in the program.

**E. Water Uses within the District:**

1. *Agricultural:* Describe the type and acreage of crops grown in the district; include seasonal ET amounts, water required for cultural practices, and the leaching requirement for each crop. List the types of irrigation systems used for each crop.

2. *Urban:* Describe the urban water use, by customer type, within the district. Describe where applicable, the waste water collection and treatment systems, recycled water uses, and methods of disposal.

3. *Groundwater Management Plan/Banking Programs:* List the quantity of water used for planned groundwater recharge, including method of recharge and retrieval. Do not include incidental recharge, such as canal seepage or deep percolation due to excess irrigation unless the quantity recharged and the method of retrieval is specified.

4. *Transfers, Exchanges, Rescheduling, Purchases, or Sales:* Describe the source and quantity of water in any transfer, exchange, reschedule, purchase or sale in or out of the district, and for what uses. Describe any other water transactions, such as trades, wheeling, wet year/dry year exchanges, etc.

5. *Other:* Describe any other water uses.

**F. Outflow from the District:** Identify where outflow leaves the district, how it is measured, the measurement accuracy, and where the outflow goes. Describe any water quality monitoring programs for outflow water (frequency of measuring and analyses performed). Identify any constituents (selenium, pesticides, salinity, etc.) that limit reuse of the outflow water and how. Also provide a brief discussion of the district's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

Section 3405 of the CVPIA states that all new, amended, and renewed CVP contracts after October 31, 1992, will provide that the contractor or agency be responsible for compliance with all State and Federal water quality standards applicable to surface and subsurface agricultural drainage discharge generated within its boundaries. Contractors included in the drainage problem area, as identified in “*A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)*,” should also complete Attachment C.

**G. Water Accounting:** Develop a water inventory for the contractor based on the last calendar year or the last water year prior to preparation of each five-year Plan revision. Indicate which dataset(s) is used for the inventory. If a contractor so chooses, a representative water supply year can also be included. The inventory should include the following:

*1. Quantify Contractors’ Water Supplies*

- a. Surface water supplies, imported and originating within the district, by month
- b. Groundwater extracted by the district, by month
- c. Estimated annual groundwater extracted by non-district parties (if records are not available, provide an estimate and basis for estimation)
- d. Recycled water by month (water originating from a municipal waste-water treatment plant)
- e. Other supplies by month

*2. Quantify Water Used*

- a. Conveyance losses, including seepage, evaporation, and operational spills
- b. Consumptive use by riparian vegetation
- c. Applied irrigation water, crop ET, water used for leaching and cultural practices (frost protection, soil reclamation, etc.)
- d. Urban water use
- e. Groundwater recharge
- f. Water exchanges, transfers and banking
- g. Estimated deep percolation within the district
- h. Flows to perched water table or saline sink
- i. Total urban wastewater utilized within the system
- j. Outflow water leaving the district
- k. Other

*3. Overall Water Budget*

Compare total water estimated to be available for sale within the district with the total water actually sold by the district.

### **Section 3: BMPs for Agricultural Contractors**

**Intent:** To develop an implementation plan for agricultural BMPs that is proven to accomplish improved (more efficient) water management.

For the purposes of the Criteria, the Plan needs to describe the program that the contractor determines will best accomplish each BMP. The success of some of the practices will depend on cooperative work with other entities. There may be constraints to successful implementation of planned programs. Monitoring and updating will allow the contractor to modify planned programs that do not accomplish the BMP as designed.

#### **A. Critical BMPs for Agricultural Contractors**

This section lists the BMPs that all contractors are to implement. Provide a description of how the BMP is being implemented and include time schedules, budgets, monitoring, and maintenance data for each BMP. The contractor must include the current year actual expenditures and a projected budget for the cost of implementing the BMPs for the three years following the Plan update.

*1. Water Measurement* - Measure the volume of water delivered by the contractor to each customer. Measurement is not required if a contractor receives only Class II water. Measure flows with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6 percent by volume. Three typical categories of measurement devices include: devices with totalizers, standard flow measurement devices, and non-standard but calibrated devices. Include frequency and date of last calibration.

*2. Designate the Water Conservation Coordinator* - Provide the job description and minimum qualifications. Job duties should include five-year plan preparation, implementation and annual updates. Include the coordinator's title, business address, business phone number, and business email address.

*3. Provide or Support the Availability of Water Management Services to Water Users* - Develop and conduct individual programs or cooperative programs with other contractors in regional programs. Some contractors may want to contract or arrange program delivery through consulting firms, cooperative extension, or others. Services may include, but are not limited to:

- a. On-farm evaluations
  - 1) On-farm irrigation and drainage system evaluations using a mobile lab type assessment, and/or
  - 2) Timely field and crop specific water use information to the water user.
- b. Normal year and real-time irrigation scheduling and crop ET information (e.g., California Irrigation Management Information System (CIMIS)).
- c. Surface, ground, and drainage water quantity and quality data.

- d. Agricultural water management educational programs and materials for farmers and staff, and the public (e.g., soil moisture and salinity monitoring; in-school awareness programs; Agwater software; efficient irrigation techniques, crop water budget and other approaches; program delivery via workshops, seminars, newsletters, field days and demonstrations, websites, etc.).
- e. Other - provide details

4. *Pricing Structure.* Adopt a water pricing structure for contractor water users based (at least in part) on the measured quantity delivered.

5. *Evaluate and Improve Efficiencies of Contractor's Pumps.* Many contractors operate booster pumps or groundwater pumps as part of their delivery facilities. A program to evaluate and improve the efficiencies of such pumps can result in energy savings or peak load reductions, or reveal capacity limitations due to inefficient facilities. Over the long term, the contractor can reduce operational costs and improve operational efficiency.

## **B. Exemptible BMPs for Agricultural Contractors**

Provide a description of how the BMP is being implemented and include time schedules, budgets, and monitoring results. Each contractor shall implement the following BMPs, unless the contractor has an approved exemption from Reclamation. The contractor is required to follow the exemption process (see Addendum A) to justify exemptions. Refer to Addendum B for example justifications for each exemptible BMP. Document the exemption in this section.

1. *Facilitate Alternative Land Use* - Facilitate alternative uses (voluntary, compensated) for lands with exceptionally high water duties, or whose irrigation contributes to significant problems such as drainage.

2. *Facilitate Use of Available Recycled Water that Otherwise Would Not be Used Beneficially, Meets all Health and Safety Criteria, and Does Not Cause Harm to Crops or Soils* - The use of recycled urban waste water for agricultural irrigation provides an opportunity for reuse of an available water supply. Reuse of urban waste water can be an important element in overall water management.

3. *Facilitate the Financing of Capital Improvements for On-Farm Irrigation Systems* - Financial aid to farmers may include cataloging available funding sources and procedures and/or obtaining funding, administering the program, and providing low-interest loans.

4. *Incentive Pricing* - Implement a pricing structure that promotes one or more of the following goals:

- a) More efficient water use at the farm level
- b) Conjunctive use of groundwater
- c) Appropriate increase of groundwater recharge
- d) Reduction in problem drainage
- e) Improved management of environmental resources

- f) Effective management of all water sources throughout the season by adjusting seasonal rates based on current conditions
- 5. *Canal Lining/Piping and Regulatory Reservoirs* -
  - a) Line or pipe distribution systems to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage
  - b) Construct regulatory reservoirs to improve distribution system delivery flexibility
- 6. *Increase Flexibility in Water Ordering By, and Delivery To, Water Users (within Operational Limits)* - Modify distribution facilities and controls to increase the reliability, consistency, and flexibility of water deliveries.
- 7. *Construct and Operate Contractor Spill and Tailwater Recovery Systems* - Construct facilities to capture and reuse district operational spills.
- 8. *Plan to Measure Outflow* - Measure the volume outflow with methods or devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 20 percent by volume. Identify spill locations, prioritize spill locations by quantity of spill, and determine best measurement method/cost. If outflow measurement has not yet been completed, submit funding proposal and provide the Estimated Cost and milestone schedule.
- 9. *Optimize Conjunctive Use* - Increase planned conjunctive use of surface and groundwater within the district. Conjunctive use usually includes a groundwater management Plan or banking program.
- 10. *Automate Distribution and/or Drainage System Structures* - Automation of distribution and/or drainage system structures may increase flexibility in water deliveries and increase the contractor's control over its water supplies, thus providing the opportunity to improve the efficiency of water use.
- 11. *Facilitate or Promote Water User Pump Testing and Evaluation* - Describe the program and number of pumps evaluated.
- 12. *Mapping*- Develop Geographic Information System (GIS) maps of the district's distribution system and drainage system. A comprehensive GIS database should include GPS locations of district facilities, inflow/outflow points, conveyance system, etc. as well as base datasets such as soils and hydrography. If digital mapping has not yet been completed, include the estimated cost and milestone schedule for implementing this BMP.



## **Section 4: BMPs for Urban Contractors**

### **Intent:**

To develop an implementation plan for urban BMPs that have proven to accomplish improved (more efficient) water management.

These Criteria require contractors to implement BMPs under the CUWCC 2009 MOU. Under certain circumstances, a BMP may not be applicable to a contractor. Contractors will implement each BMP unless the contractor provides adequate documentation for an exemption. Foundational BMP 1.3, Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections, is not exemptible.

This part of the Plan identifies contractor-specific programs to accomplish the BMPs. It is understood that programs developed by wholesale agencies may not be implemented at the retail customer level, except within the contractor's retail service area. For the purposes of the Criteria, the Plan needs to describe the program that best accomplishes the BMP.

The success of some of the practices will depend on cooperative work with other entities. It is recognized that there may be constraints to successful implementation of planned programs. Monitoring and updating will allow the contractor to modify any planned programs that do not accomplish the BMP as designed.

### **BMPs for Urban Contractors**

This section lists the BMPs that all contractors are to implement. Provide a description of how the BMP is being implemented and include time schedules, budgets and monitoring, and maintenance data for each BMP. The contractor must include the current year actual expenditures and a projected budget for the cost of implementing the BMPs for the three years following the Plan update. Descriptions of the BMP targets and program designs are available in the Plan Guidebook and at the CUWCC website.

### **Foundational BMPs**

1. Utility Operations Programs
  - 1.1. Operations Practices
    - A.1) Conservation Coordinator
    - A.2) Water waste prevention
    - A.3) Wholesale agency assistance programs
  - 1.2. Water Loss Control
  - 1.3. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections
  - 1.4. Retail Conservation Pricing
2. Education Programs
  - 2.1. Public Information Programs
  - 2.2. School Education Programs

## **Programmatic BMPs**

3. Residential
  - A.1) Residential assistance program
  - A.2) Landscape water survey
  - A.3) High-efficiency clothes washers (HECWs)
  - A.4) WaterSense Specification (WSS) toilets
  - A.5) WaterSense Specifications for residential development
4. Commercial, Industrial, and Institutional (CII)
5. Landscape

## **Attachment A**

### *Exemption Process*

**Intent:** To demonstrate in a clear and concise manner that a BMP is not cost-effective, not financially feasible, and not legally or environmentally possible for a contractor to implement. Only the BMPs in section 3B are exemptible for agricultural contractors. For urban contractors, **all BMPs are** exemptible except for Foundational BMP 1.3.

**Evaluation:** Some BMPs are not appropriate or possible for a contractor to implement. To document an exemption, the basis, rationale, and details for excluding a BMP must be provided. Such documentation must address, as appropriate, cost-effectiveness, financial feasibility, and environmental or legal constraints to BMP implementation. Urban BMP exemption requests should use the CUWCC exemption forms. All urban and agricultural exemption requests will be reviewed for completeness, accuracy, and appropriateness by either Reclamation or an independent contractor.

### **Detail Expected in an Adequate BMP Exemption**

**Legal Constraints** - Due to legal constraints, the following must be detailed in order to justify a BMP exemption:

1. A list of any known laws, regulations, court decisions, or other legal constraints that make it illegal for the contractor to implement the BMP.
2. A list of the steps required to remove these constraints.
3. A description of what steps the contractor has taken to remove these constraints.
4. Documentation of efforts by the contractor to work with other entities that have the legal authority to carry out the BMP within the contractor's service area.

**Environmental Constraints** - In order to justify an exemption due to known adverse environmental impacts, the Plan must document critical environmental issues and known (qualitative and/or quantitative) negative impacts of the BMP, and an explanation of why effective mitigation of these impacts is not possible. If mitigation of the environmental impacts is possible, the practice must be implemented unless it can be exempted by another exemption category. For example, if the mitigation costs make the project economically infeasible, a discussion of the mitigation plan and necessary mitigation costs should be included as part of the economic analysis.

**Financial Constraints** - In order to adequately justify an exemption due to financial constraints, the Plan must clearly document the following:

1. The contractor's funding needed to implement the BMP.
2. A discussion regarding why the contractor cannot finance the BMP through rate adjustments, assessments, etc.
3. A discussion of the contractor's reasonable efforts to secure funding from other entities that include, but are not limited to, lending institutions and bonding authorities, and an explanation of why these entities would not provide funding.

4. The required amount of a grant or subsidy necessary to feasibly implement the BMP if financing or partnerships could not be obtained. A benefit-cost analysis that demonstrates the costs to the contractor outweigh the benefits to the contractor over the life of the measure. The contractor must perform the analysis by comparing the present value of all benefits to the present value of all costs.

Document the projected/estimated benefits and costs and the methodology for analysis (benefits and costs should be quantified to the extent possible). The analysis performed for each excluded BMP (from the contractor's perspective) must include, but is not limited to, the following benefits and costs:

#### **Benefits**

- a) All capital costs avoided by the contractor which include, but are not limited to, the costs associated with the development of new supplies (studies, construction, labor, etc.), transportation, the required increase in storage, distribution capacity, wastewater facilities and treatment capacity, etc.
- b) Operation and maintenance (O&M) costs associated with the decrease in the production and distribution of water or the treatment and disposal of wastewater that include, but are not limited to, energy, labor, treatment, storage, drainage treatment and disposal, etc.
- c) Water purchases avoided by the contractor.
- d) Environmental costs avoided by the contractor.
- e) Environmental enhancements.
- f) Revenues from other entities that include, but are not limited to, revenue from the sale of water made available by the BMP, financial incentives received from other entities, etc.
- g) Other benefits to the contractor customers that include, but are not limited to, hydropower, improved crop yields, improved crop quality, labor savings, fertilizer savings, increased farm income, etc.

#### **Costs**

- a) Capital expenditures incurred by the contractor for implementation of the BMP that include, but are not limited to, equipment, supplies, materials, construction, etc.
- b) O&M costs to plan, design, implement, enforce, and evaluate the practice.
- c) Financial incentives to customers.
- d) Costs to the environment (describe the nature of the negative impact(s) and potential losses to the environment).
- e) Other costs to the contractor.

Several accepted benefit-cost analysis methodologies exist (e.g., California Energy Commission's Integrated Resource Planning Methodology, Generally Accepted Accounting Principles, AWMC's Net Benefit Analysis, etc.). A contractor is considered to be the best suited to evaluate their own economic situation with an appropriate methodology.

2. A discussion and quantification, to the extent possible, of other benefits associated with the implementation of the BMP that may be of interest to potential partners, but are not the direct, sole responsibility of the contractor.

## **Addendum B**

To establish that a BMP is not applicable (NA) to the contractor, the Plan should explain why the BMP does not apply to the contractor. This justification must be consistent with Section 1: Description of the District. Example justifications for each exemptible BMP are listed below. This list is not all inclusive.

### **Exemptible BMPs for Agricultural Contractors**

1. *Facilitate alternative land use* - NA could include contractors without irrigable lands that have exceptionally high water duties or whose irrigation does not contribute to significant problems.
2. *Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils* - NA could include completely piped systems that do not have delivery constraints.
3. *Facilitate the financing of capital improvements for on-farm irrigation systems* - None identified.
4. *Incentive pricing* - Contractor that receives only Class II water.
5. *Canal lining/piping and regulatory reservoirs* - NA could include completely piped systems, unlined canal systems, sections which are used as part of a planned conjunctive use program, or completely piped systems that do not have delivery constraints.
6. *Increase flexibility in water ordering by, and delivery to, the water users within operational limits* - None identified.
7. *Construct and operate contractor spill and tailwater recovery systems* - NA could include completely piped systems that do not have delivery constraints.
8. *Plan to measure outflow* - NA could include no spill or tailwater leaves the district.
9. *Optimize conjunctive use* - NA could include contractors who do not overlie a useable groundwater basin and thus neither the contractor nor their customers pump or use ground water, and the contractor has no water supplies other than the contract supply.
10. *Automate canal structures* - NA could include completely piped systems which do not have delivery constraints.
11. *Facilitate or promote water user pump testing and evaluation* - NA could include districts that have no groundwater, lift or diversion pumps.
12. *Mapping* -None identified

## Attachment C

### *Information Required of Contractors Located in a Drainage Problem Area*

The contractor's included in the drainage problem area, as identified in "A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)," are listed by subarea below. If future editions of the drainage report revise the boundaries of a drainage problem area, or other factors used to determine which contractors are in a drainage problem area, Reclamation will revise Attachment A to conform to the current drainage report.

1. Reclamation contractors in the **Grasslands Subarea**: Broadview Water District, Central California Irrigation District, Del Puerto Water District, Firebaugh Canal Water District, Mercy Springs Water District, Pacheco Water District, Panoche Water District, San Luis Canal Company, and San Luis Water District.
2. Reclamation contractors in the **Westlands Subarea**: James Irrigation District, Tranquillity Irrigation District, and Westlands Water District.
3. Reclamation contractors in the **Tulare Subarea**: Alpaugh Irrigation District, Atwell Island Water District, Lower Tule River Irrigation District, and Pixley Irrigation District.
4. Reclamation contractors in the **Kern Subarea**: Alpaugh Irrigation District.

The contractors listed above shall describe which recommendations prescribed in "A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)" have been incorporated in their water conservation programs to improve conditions in drainage problem areas. These recommendations include:

- a) Source Control
- b) Land Retirement
- c) Drainage Water Treatment
- d) Drainage Water Reuse
- e) Shallow Groundwater Pumping
- f) Evaporation Ponds

Provide a description and level of expenditure for each activity designed to address the recommendations of the San Joaquin Valley Drainage Program. Identify how implementation of the recommendations has or will substantially reduce deep percolation on drainage problem lands. Describe which recommendations have not been implemented and why.